

## **REMARKS/ARGUMENTS**

Claims 1-6 remain in this application. Claims 4, 5 and 6 have been amended. Claims 7-18 were previously withdrawn as a result of an earlier restriction requirement. In view of the examiner's earlier restriction requirement, applicant retains the right to present claims 7-18 in a divisional application.

### **§ 112 Rejections**

2. Claim 4 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Claim 4 has been amended to state that the controller comprises an air logic circuit. No new matter is added by this amendment, and support for this amendment can be found at, for example, paragraph [0028].

4. Claims 4, 5, and 6 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 4, 5 and 6 have been amended. Claim 4 has been amended as discussed above. Claims 5 and 6 have been amended to replace the "extruding step" with the "extending step." Applicants thank the Examiner for examining these claims under the assumption that the "extruding step" was an error and applicants intended to state "extending step."

### **§ 102 Rejections**

8. Claims 1, 2, and 5 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 3,190,806 (*Mangieri*). The Examiner stated that Mangieri et al discloses a tubular member 48, (1) located near an opening in a reactor, and a second end inserted into the interior of the reactor, the tubular member having an outer wall defining an interior space adapted to allow sliding movement of a reactor monolith C therethrough, and (2) a plurality of engagement members 42, 44 located within the interior space of the at least one tubular member and spaced along a length thereof, each engagement member actuatable between an extended position and a retracted position; and (3) controlling the plurality of engagement members such that each engagement member actuates between the extended position, thereby preventing

sliding movement of the monolith through the tube and the retracted position, thereby allowing the monolith to slide past the engagement member within the tube (ln 53-62); (4) the controlling step includes controlling the members in a sequential manner, thereby slowly moving the monoliths along the length of the tube and preventing a continuous free-fall descent; (5) wherein the at least one tubular member in the extending step includes a plurality of tubular members linked together in an end-to-end orientation 48/50.

Applicants respectfully disagree with the Examiner's characterization of the Mangieri reference, and will address the Examiner's characterization of the Mangieri reference in order of items (1) – (5) above.

(1) located near an opening in a reactor, and a second end inserted into the interior of the reactor

Mangieri does not disclose a tubular member located near an opening in the reactor, and a second end of the at least one tubular member inserted into the interior of the reactor. Instead, Mangieri discloses a means for admitting one fuel bundle at a time into the pressure vessel (the high pressure reactor vessel A – see column 2 lines 25-26) and positioning it adjacent to the inlet port of the core (see column 2 lines 53-57). The “means comprise, first a vertical, cylindrical pressure lock chamber which is positioned above the pressure vessel (the reactor) and at its periphery and which is sealed at its upper and lower ends by gate valves 42, 44, the distance between which is sufficient to accommodate the length of a fuel bundle” (column 2, lines 55-65, emphasis added). The lower end of the pressure lock (the tubular member) communicates with the interior of the pressure vessel (see column 2, line 63), but Mangieri does not disclose that the lower end of the pressure lock extends into the interior of the reactor.

The tubular member disclosed in Mangieri is different from the claimed structure “extending at least one tubular member into an interior of a reactor such that a first end of the at least one tubular member is located near an opening in the reactor, and a second end of the at least one tubular member is inserted into the interior of the reactor.” The Mangieri tubular member is above the reactor and at its periphery, not

extending into the interior of the reactor. Therefore, the Mangieri reference does not disclose nor suggest the claim limitation restated in (1) above.

(2) a plurality of engagement members 42, 44 located within the interior space of the at least one tubular member and spaced along a length thereof, each engagement member actuatable between an extended position and a retracted position;

Numbered elements 42 and 44 in the Mangieri discloser are gate valves (see column 2, line 60). “[The] vertical, cylindrical pressure lock chamber 40 which is positioned above the pressure vessel and at its periphery and which is sealed at its upper and lower ends by gate valves 42, 44 ...” (column 2 lines 57 – 60). These gate valves seal the pressure vessel. Mangieri does not disclose that the valves 42 and 44 (cited by the Examiner) are “actuatable between an extended position and a retracted position.” Fig. 1 of Mangieri does appear to show the valves (42, 44) having screw-type handles. However, the structure and function of these screw-type handles is not discussed in Mangieri. Mangieri simply discloses gate valves. Mangieri does not disclose engagement members that are actuatable between an extended position and a retracted position, as disclosed in the present disclosure and claimed in claims 1, 2 and 5. Therefore, the Mangieri reference does not disclose nor suggest the claim limitation restated in (2) above.

(3) controlling the plurality of engagement members such that each engagement member actuates between the extended position, thereby preventing sliding movement of the monolith through the tube and the retracted position, thereby allowing the monolith to slide past the engagement member within the tube (In 53-62);

Mangieri discloses that the fuel bundles move into the reactor (in a preferred form) by a “vertically movable conventional control rod actuating rod 46 which breaches the bottom head of the pressure vessel 2 through a pressure lock (not shown), extends through a guide channel 48 which traverses the pressure vessel 2 breaches the top head 4, and is sufficiently long to extend into the pressure lock chamber 40” (the tubular member). “This rod has a pronged device 50 on its upper end which engages the bottom bearing spindle on the fuel bundle to lower the bundle from the pressure lock chamber 40 into the pressure vessel 2.” In Mangieri, the fuel bundle is moved by a

single rod (46) which is moved into place from below (not actuated from along the length of the tubular member), equipped with a hooked device to grab the fuel bundle and lower the bundle down into the reaction chamber (see column 68 – column 3, line 6). That is, Mangieri discloses a different mechanism for moving the fuel bundles out of the pressure lock chamber (the tubular member) than the claimed mechanism where engagement members located along the length of the tubular member actuate between an extended position and a retracted position to allow monoliths to slide down the tubular member.

In addition, this rod 46 is not the tubular member of claim 1 (tubular member having an outer wall defining an interior space adapted to allow sliding movement of a reactor monolith therethrough). Rod 46 is not structured and arranged to contain a monolith (see Fig. 1). Neither is guide channel 48, (cited by the Examiner as rod 48), the tubular member of claim 1. Guide Channel 48 traverses the pressure vessel 2 and breaches the top head 4, and is sufficiently long to extend into the pressure lock chamber 40 (see column 3, lines 1-3). That is, one end of guide channel 48 is above the top of the pressure vessel, and the other end of guide channel 48 extends below the bottom of the pressure vessel (see Fig. 1). Guide channel 48 traverses the pressure vessel. Guide channel 48 is not the tubular member as claimed in claim 1: “extending one tubular member into an interior of a reactor such that a first end of the at least one tubular member is located near an opening in the reactor, and a second end of the at least one tubular member is inserted into the interior of the reactor.”

In addition, this mechanism of moving the fuel bundles is different from the claimed mechanism where “a plurality of engagement members located within the interior space of the at least one tubular member and spaced along a length thereof,” actuate between an extended position and a retracted position to allow the controlled movement of monoliths through the tubular member. The valves of Mangieri are not a plurality of engagement members. The rod(s) of Mangieri are not a plurality of engagement members. The claimed limitations are not disclosed nor suggested in Mangieri.

(4) the controlling step includes controlling the members in a sequential manner, thereby slowly moving the monoliths along the length of the tube and preventing a continuous free-fall descent

Mangieri does not disclose nor suggest controlling a plurality of engagement members in a sequential manner, thereby slowly moving the monoliths along the length of the tube.

(5) wherein the at least one tubular member in the extending step includes a plurality of tubular members linked together in an end-to-end orientation 48/50.

The limitations of claim 5, restated by the Examiner, are not disclosed in Mangieri. While Mangieri discloses that the pressure lock chamber “communicates with” the interior of the pressure vessel (see column 2, line 63), the interior of the pressure vessel is not an additional tubular member. The pressure vessel, as shown in Figures 2 and 3 of Mangieri, is a spiral structure. The circles shown in Figures 2 and 3 of Mangieri are the cylindrical fuel bundles, seen from the top C (having upper and lower bearings 22, 44). Mangieri does not disclose nor suggest a plurality of tubular members linked together in an end-to-end orientation to form the one tubular member “located near an opening in the reactor, and a second end of the at least one tubular member is inserted into the interior of the reactor.”

### **§ 103 Rejections**

9. Claims 3, 4, and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Mangieri in view of U.S. Patent No. 4,796,746 (*Bergstrom*).

Claims 3, 4 and 6 all depend from claim 1. In view of the arguments above, Applicants respectfully submit that Mangieri does not disclose nor suggest the elements of claim 1, and therefore claims 3, 4 and 6, which depend from claim 1 and therefore contain all of the limitations of claim 1, are not obvious in view of Mangieri and further in view of Bergstrom.

The Examiner states that Mangieri fails to disclose the controlling step further including controlling the engagement member via a gas containing logic circuit and the extending step including a plurality of expandable bladders, and the step of controlling the engagement members includes inflating and deflating the bladders. Applicants agree.

In addition, Applicants further submit that claims 3, 4 and 6 all depend from claim 1. In view of the arguments above, Applicants respectfully submit that Mangieri does not disclose nor suggest the claimed elements of claim 1, and therefore claims 3, 4 and 6, which depend from claim 1 and therefore contain all of the limitations of claim 1, are not obvious in view of Mangieri and further in view of Bergstrom.

#### **Conclusion**

Based upon the above amendments, remarks, and papers of records, applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Applicant believes that a one month extension of time is necessary to make this Reply timely. Should applicant be in error, applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Appl No.: 10/670865  
Response dated: February 4, 2010  
Office Action dated: October 5, 2009

Please direct any questions or comments to Susan S. Wilks at (607) 974-8831.

DATE: February 4, 2010

Respectfully submitted,

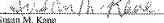


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